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Asymmetric Shocks, Structural Rigidities and Adjustment Capability in EMU - A Review.

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Abstract

The high degree of sustainable nominal convergence between EMU member states have not implied a corresponding degree of real and structural convergence. Still existing structural asymmetries in the monetary union, which is not an Optimum Currency Area, are bound to broaden due to continuous enlargement of Europe, giving rise to various kinds of shocks and divergences, poor economic performance in some member countries and to Europe as a whole. This paper examines the potential sources of asymmetries, which to a large extend determine the exposure to asymmetric shocks, or asymmetrical effects stemming from symmetric shocks. We also analyze available adjustment mechanisms and appropriate policy instruments in EMU's economic reality. Using a set of economic indicators we investigate how some product and labor market rigidities affect in an adverse way macroeconomic performance in EMU. Having restricted the fiscal room for maneuver under the Stability and Growth Pact, existing asymmetries and structural rigidities call for a speed-up of structural reforms, as the only way to growth and prosperity.

Keywords:

EMU, optimum currency areas, asymmetries, asymmetric shocks, adjustment capability, product and labor market regulation.

JEL Classification: **E5, E6, G38, K20, L43, L5**

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1. Introduction

The EMU's policy and institutional frameworks have been designed to foster macroeconomic stability, with price stability been a key intermediate target. Having defined a set of six nominal convergence criteria for joining the EMU, the economies of the euro area today appear to have achieved a reasonable degree of nominal convergence.

Prior to the launch of the euro, many economists argued that EMU was not an optimum currency area and, because of this, lacked the appropriate adjustment instruments to tackle shocks. In a heterogeneous EMU some member states are bound to be hit asymmetrically. Although the worst fears about euro area's capacity to adjust to shocks have not been justified, euro appears to have not improved EMU's countries' capacity to recover quickly from economic downturns. On a similar note and despite these achievements, growth performance in the euro area has been disappointing so far, especially in contrast with the rest of the world. Diverging macroeconomic performance has been observed even within EMU, as some indicators suggest, probably due to divergent efforts to undertake necessary structural reforms, which also may deepen structural divergence, especially between core and peripheral countries.

There is a comprehensive literature using a variety of econometric models and techniques aiming at estimating the extent of asymmetries in transmission mechanisms for monetary policy and their consequences for output and employment or other macroeconomic aggregates. However, in this paper we explore possible sources of asymmetries, how they link to various kinds of shocks and which factors determine shock exposure and adjustment capability in EMU countries. Using appropriate indicators, we illustrate correlations between these features and show how they connect to countries' macroeconomic performance.

Obviously, structural asymmetries require country specific structural reforms. Although there is a consensus about the need for reforms at a European level, national policy makers have not been able to fully implement such reforms, as stated in the so called Lisbon strategy. Postponing the implementation of such structural measures, a country's adjustment capacity to shocks is delayed and so does its own and Europe's capability to raise potential output.

2. The nature of shocks

The most important feature in economic and monetary union (EMU) is the loss of the nominal exchange rate as a policy instrument. In a fast-changing economic environment, with speedy market integration, increasing

factor mobility, fluctuations in economic activity, no matter the cause of them, the loss of this instrument has serious implications for countries' long term macroeconomic stability and welfare.

As the theory of Optimum Currency Areas (OCA) (Mundell R. 1961) suggests, labour mobility and market flexibility become the main adjustment mechanism to tackle shocks in a monetary union, replacing to some extend traditional monetary policy instruments.

If shocks are differential or asymmetric, they may require different macroeconomic policy response across EMU countries and alternative means of tackling them. Hence, in the context of EMU, it becomes of central importance to reduce the exposure of a member country to shocks with preventive policies, such as greater nominal flexibility and labor mobility, as well as to reinforce traditional stabilization instruments, such as regional and fiscal policies, which of course calls for sound public finances. Otherwise, symmetric as well as asymmetric shocks may be costly for countries participating in EMU and, without appropriate structural policies, all shocks become asymmetric (Mundell 2002). Factors such as country size, economic structure, behavior of economic agents and social partners' preferences, lie behind asymmetries, or, symmetric shocks with asymmetric effects. For these reasons all shocks, both symmetric and asymmetric, are potentially problematic and require appropriate adjustment mechanisms (Buti M. and Sapir A. 2002).

Shocks may are usually defined as any unanticipated event, which has a direct or indirect impact on endogenous variables such as output, inflation, employment of the reference system without however being part of them (European economy N.44 1990). On this basis, a traditional classification of shocks in the economic literature is *common* or *symmetric*, versus country specific or *asymmetric*. Common or symmetric shocks have a simultaneous and direct impact on all member countries of the EMU, while country specific, local, or asymmetric shocks have an impact on only one country or region. Both these categories of shocks can affect the demand or the supply side of an economy, which explains another distinction, the *demand* and *supply* side shocks.

Buti M. and Sapir A. (2002) describe the Asian crisis 1998-99 and the global slowdown 2001-2002 as examples of a typical negative symmetric demand side shock, while the oil price hike in 2000 was a negative supply side shock. These demand and supply shocks, although symmetrical in origin, had asymmetrical consequences and reactions in different European countries, due to different economic structures, economic behavior or preferences.

Another distinction is *policy-induced* shocks versus *exogenous* shocks. Policy shocks are obviously asymmetric, generated by domestic fiscal or monetary policy reactions. There is widespread evidence that ideological

preferences and political considerations influence governments' macroeconomic policies, implying a variety of responses to common shocks. By such behavior, they tend to induce endogenous asymmetric shocks, prior or after elections, which again generate divergent political business cycles (Sardelis C.1994; Buti M. and Sapir A. 2002).

As a positive policy-induced EMU's shock for peripheral countries can be considered the significant reduction in interest rates experienced when European Central Bank (ECB) assumed responsibility for the common monetary policy. (European Economy No.1 2004). Also changes in behaviors of economic agents (households, firms, social partners) can create by the same way asymmetric shocks.

Finally, another important distinction is between *temporary* and *permanent* shocks, with several implications when analyzing adaptability and appropriate policy response. Stabilization policy may be called in the case of temporary shocks, while policies for structural adjustment are imperative as a response to permanent shocks.

3. Structural Asymmetries and Exposure to shocks

As already mentioned, different economic structures, lack of synchronization in economic cycles and limited adjustment capacity due to rigid labor markets, low cross-border labor mobility and the absence of a central fiscal authority may impose asymmetric costs that might outweigh the benefits of the EMU. (European Economy No.1 2004). As the OCA theory suggests, an independent monetary policy with a flexible exchange rate work as substitutes for flexible markets only in the case of temporary shocks. But it is not a solution and appropriate policy to long-term real rigidities in the case of permanent shocks. Since these two above tools no longer exist, either for short or long-term policies in the euro area, governments should have greater incentives to strengthen and to pursuit structural reforms in order to improve the economy's adaptability to shocks, (temporary and permanent) and to strengthen its growth potential. This can be considered as a one-way policy in the context of EMU.

Usually referred in the literature factors which give rise to asymmetries or structural differences across EMU countries are:

- Differences in *economic structure* are an important source of asymmetry, as it may cause national economies to react differently to a common shock. Lack of diversification in production for the domestic or the export markets, the presence of domestic oil, natural gas or other energy production, as well as the degree of dependence on oil imports, specialization in specific sectors may be causes of asymmetries and sector specific shocks. Eco-

nomic structures and integrated product markets characterized by inter-industry specialization implies that, common shocks will asymmetrically affect the countries in which the various industries are located (European Economy No. 44 1990). On the other hand, with more similar economic structures, dominated by intra-industry specialization, the effects of common shocks become more symmetric. As under EMU integration proceeds and trade linkages between participating countries increases the exposure and likelihood of asymmetric shocks can be reduced. (Buti A. and Sapir A. 2002).

- On the other hand, in a European market characterized by increasing returns to scale, knowledge spillovers, geographical concentration of industries and greater specialization, opposite tendencies may be developed.
- Related to differences in economic structures are differences in *structures of exports and imports* among EMU countries. A common euro exchange rate affects euro area countries asymmetrically. An appreciation of the euro will most likely have opposite effects on economic activity between countries with positive and negative contribution of net exports to growth. Countries with a large exporting sector will be hit by a negative shock, whereas countries with large trade deficits vis-à-vis countries outside the Euro area will benefit, as domestic prices tend to decline, boosting both GDP and real income. (Suardi M. 2002).
- Differences in the degree of *labor market flexibility*, especially wage flexibility and labor mobility, geographical as well as occupational. The elimination of labor market rigidities and the higher degree of labor market flexibility have an important role to play in helping EMU countries to absorb shocks. (De Grauwe 2000).
- There is evidence that tax and benefit systems, employment protection legislation, minimum wages and unemployment insurance systems, active labor market policies, which may help or hinder labor mobility and the type of the wage formation process, differ to a large extent across European countries. They influence the degree of labor market and wage flexibility, especially as the wage determination process, if it is centralized or decentralized, along with differences in labor market institutions, determine rigidities and the shock absorbing capacity in each country, which help to explain existing differences in unemployment rates (Blanchard O. and Wolfers J. 2000).

- *Inflation differentials* between member states are explained by factors such as: price shocks due to differences in member states consumption patterns, market imperfections and exposure to extra euro area cyclical fluctuations, which continue to persist between member states. Also, policy-induced price changes due to uncoordinated decisions about indirect taxes, administrative prices, and the pace of deregulation, may also constitute sources of inflation diversity. (European Economy No 1. 2004).
- Monetary policy *transmission mechanisms* may differ as well among member states, for several reasons. For instance, differences in level of leverage of the private sector, the composition of loans in fixed and floating rates as well as the competitive conditions in the financial sector, are factors that may induce diverging responses to changes in the ECB fund rate. Such differences in financial structures are a likely a result of divergent legal structures among member states, which have to be harmonized (Cecchetti S. 1999), since this has been recognized as an important source of heterogeneity and a crucial policy issue in the functioning of the EMU. (Hughes Hallett A. 2002).
- Financial market integration by creating a common regulatory framework constitutes a Lisbon target. The integration of fragmented national systems is going to have positive impacts on efficiency, competition and stability (European Economy No 1. 2004).
- Differences in *stabilization capability of fiscal policy* defined by the room of maneuver for budgetary policy, determined by the combination of public deficit and debt in the event of a cyclical downturn. (Buti M. and Sapir A. 2002)
- Differences in *behavior of economic agents* (European Economy No 44 1990). Asymmetric behaviour in wage setting and reaction patterns to a common exogenous event may give rise either to endogenous asymmetric shocks or to asymmetric reactions to a common exogenous disturbance. It follows that a more homogenous economic behavior is to be expected, as multilateral policy surveillance may gradually foster greater homogeneity. (Buti M. and Sapir A. 2002)
- Different consumer or political *preferences* along with differences in the *regulatory framework* are also an issue, which should be addressed in order to bring about not only a harmonized economic and regulatory environment, but also a common *macroeconomic stability culture*.

4. Adjustment capability to shocks

Every EMU country has to develop its own appropriate adjustment mechanism and capacity to respond to shocks stemming from the above described asymmetries. The nature of a shock determines a fundamental distinction in policy response and a basic rule derived from common sense should be to treat temporary shocks with available counter-cyclical measures and permanent shocks by reforming the underlying structure and the functioning of the economy.

Despite continuous convergence and harmonization efforts intensified after participation in the EMU, sizable differences remain with regard to both stabilization and structural adjustment capability among EMU countries. Given the loss of monetary and exchange rate instruments for individual countries, fiscal policy and structural policies are the remaining instruments to tackle problems arising from various types of economic shocks, symmetric or asymmetric, demand or supply, temporary or permanent.

Fiscal policy in EMU remains decentralized with certain constraints and falls under the responsibility of member states, with adequate mix of autonomy, discipline and coordination. Fiscal discipline and flexibility are the main complementary principles governing budgetary policy in EMU. Flexibility is required to deal with country-specific shocks and discipline to safeguard the credibility of the single monetary authority (Buti M, Franco D, Ongena H. 1998). Fiscal stabilization capability depends on the size and effectiveness of *automatic stabilizers* and the *room for maneuver* of fiscal authorities. The degree of smoothing cyclical fluctuations provided by automatic stabilizers varies significantly under various types of shocks and across countries. (Buti M. and Sapir A. 2002).

The efficacy of stabilization policies is higher in the case of shocks to private consumption and weaker in the cases of investment and export demand shocks. It is much more effective in countries with large automatic stabilizers, as in the northern European countries, but less effective in the European south, where the size of automatic stabilizers is smaller. The other dimension of a country's fiscal stabilization capability, the room for maneuver, depends on both the deficit and the outstanding public debt, in order to meet the requirements of the Stability and Growth Pacts (SGP). Violations of the SGP requirements in terms of high deficit and debt, severely curtail the room for maneuver for fiscal policy and, as a consequence, its capability to stabilize an economy afflicted by a symmetric or an asymmetric shock.

Parallel to country specific fiscal adjustment capabilities, EU *structural funds* constitute a complementary instrument, designed to tackle intra- European regional disparities and to shield regions from negative real shocks, part of which may be attributed to the overall restructuring of the European

Economy, especially after the introduction of the EMU. Despite the low degree of federal financing, relative to other federations, the structural funds in general support and improve the adjustment capacity of regions and enhance EU's shock-absorbing capabilities, under strict conditionalities in order to avoid problems of moral hazard and inefficient use of transfers (European economy No 44 1990).

Under these conditions and constraints of fiscal policies, the development of adjustment capability to cope with temporary and, particularly, permanent shocks, relies almost exclusively on the ability and the speed to implement *structural reforms*. Structural problems must be tackled only by structural reforms either inside or outside of EMU.

A structural reform strategy is an integral part, along with fiscal policies, of a national strategy to maximize the net benefits of a participation in a monetary union. An appropriate national strategy in the context of EMU requires state flexibility and asymmetric responses to confront with EMU asymmetries, exercised in a more indirect manner. (Pagoulatos G. and Pelagidis T. 2004). Appropriate reforms with a view to increase flexibility and efficiency in labor and product markets, a country promotes its long term protection against external shocks. EMU is likely to strengthen the political incentives and increase pressure for *labor-marker reform* to reduce structural (equilibrium) unemployment. A such well-designed reform could involve all related policy measures and instruments, for example, duration of unemployment benefits, substitution of individual for collective wage agreements, minimum wages, legal framework for wage setting, employment protection taxes etc. (Calmfors L. 1998). We have to ask which labor market structure could provide the role of economic stabilizer using nominal wage (Hughes Hallett A. and Viegi N. 2001).

As the common currency is expected to induce a large scale relocation of production at a European level, countries with more *business-friendly regulatory environment* will most likely attract more investment those with rigid and obsolete approaches to entrepreneurship and will benefit more than others from EMU participation. To reduce the administrative burden is another economic imperative in a monetary union, probably prompting an EU-wide regulatory competition.

Moreover, the realization of structural reform program and strategy, the most important tool for adjustment capability to shocks, requires the active role of the state in the field of *collective action* through synergies with social partners, to be a coordinator, a mediator, a partner and facilitator. (Pagulatos G. and Pelagidis T. 2004).

5. Measuring exposure to shocks

In EMU countries where convergence criteria were defined in nominal terms and for one particular moment of time, this implies nothing about convergence in structures and patterns of responses, or the ability to sustainable convergence. If significant differences remain in structure or in the responses to policy changes or external shocks, then it is inevitable to have different impacts in different places, which may at least delay real convergence or drive Union's economies apart.(Hughes Hallett A. and Piscielli L. 1999). Using different models, there have been many attempts to estimate and quantify the impacts and costs imposed by asymmetric shocks under EMU (e.g. Dornbusch et al. 1998, Driver R. and Wren-Lewis S. 1999, Hughes Hallett A. and Piscielli L. 1999, Wyplosz Ch. 1989).

Having described above the divergences in economic structures and sources of asymmetries, we will now focus on the use of indicators which measure the degree of exposure and the adjustment capability to shocks. Such a list of indicators could be an operational and useful instrument for policy measures and give useful guidance to design structural reforms.

Using OECD indicators of product and labor markets regulations, we can rank European countries in terms of their regulatory impediments to smooth market functioning, along with their exposure and their adjustment capability to shocks (Buti M. and Sapir A. 2002). The OECD indicators of product market regulation (PMR indicator) presented in table 1, are constituted of 16 low – level indicators grouping in three main categories, namely state control, barriers to entrepreneurship, and barriers to trade and investment. The indicators of Employment Protection Legislation (EPL) illustrate the strictness of this legislation and the degree of malfunctioning of labor markets created by rigid job-security provisions. Such provisions reduce the adaptability of labor market, inhibit competition, liberalization and necessary flexibility under EMU regime (Conway P. et al. OECD 2005). Although EPL is a very important aspect, it is only a part of a wide range of interventions in the labor market. Adding the two indicators we construct a synthetic total indicator showing the market's functioning. Where restrictive regulatory environment in the product market tends to be associated with restrictive employment protection policies, there seems to be a high degree of correlation between the two regulatory regimes (Nicoletti G. et al 2000).

By using the combination of general government deficit and outstanding debt position, we can show the room for maneuver of fiscal policy and it's stabilization capability particularly in the case of temporary shocks. Countries with low deficits and debt have greater room for maneuver to adopt appropriate discretionary policies to handle shocks, and are less exposed to them.

Table 1: Exposure and Adaptability Shocks.								
	Rigidities in Markets				Total market Regulation		Fiscal policy's room for maneuver	
	Product Market Regulations[1] (PMR)		Strictness of Employment Protection Legislation (EPL)		PMR + EPL		General Gov. Balance as % GDP	General Gov. Debt as % of GDP
	1998	2003	1998	2003	1998	2003	5-year av. 2001-05	2005
AUSTRIA	2,5	1,9	2,4	2,2	4,9	4,1	- 0,7	62,9
BELGIUM	2,7	1,9	2,5	2,5	5,2	4,4	+ 0,1	93,3
CZECH REP.	2,3	1,6	1,9	1,9	4,2	3,5	- 4,2	30,5
DENMARK	1,7	1,2	1,8	1,8	3,5	3,0	- 2,8	35,8
FINLAND	1,7	1,3	2,2	2,1	3,9	3,4	- 3,5	41,1
FRANCE	2,3	1,7	2,8	2,9	5,1	4,5	- 3,3	66,8
GERMANY	1,6	1,4	2,6	2,5	4,2	3,9	- 3,3	67,7
GREECE	2,3	2,0	3,5	2,9	5,8	4,9	- 5,7	107,5
HUNGARY	2,4	1,7	1,5	1,7	3,9	3,4	- 5,6	58,4
IRELAND	1,9	1,7	1,2	1,3	3,1	3,0	0,0	27,6
ITALY	4,0	2,0	3,1	2,4	7,1	4,4	- 3,5	106,4
LUXEMBURG	-	1,5	-	-	-	-	+ 1,2	6,2
NETHERLANDS	1,3	1,2	2,3	2,3	3,6	3,5	- 1,0	54,0
POLAND	2,1	3,0	1,9	2,1	4,0	5,1	- 3,3	42,5
PORTUGAL	1,5	1,3	3,7	3,5	5,2	4,8	- 3,9	63,9
SLOVAK REP.	-	1,1	2,5	2,0	-	3,1	- 4,3	34,5
SPAIN	1,9	2,1	3,0	3,1	4,9	5,2	- 0,2	44,2
SWEDEN	2,1	1,1	2,6	2,6	4,7	3,7	+ 1,6	50,3
U.K.	0,8	0,7	1,0	1,1	1,8	1,8	- 2,3	42,8
EURO AREA	2,1	1,6	2,6	2,5	4,7	4,1	- 2,5	70,8
U.S.A.	1,2	0,5	0,7	0,7	1,9	1,2		

[1] The scale is 0-6. A higher figure indicates higher market restrictions and employment protection respectively.

Sourses: OECD ECO/WKP (2005) 6. Employment Outlook 2004. European Commission: European Economy No 2 2006.

As shown in table 1, European countries and also euro area countries differ a great deal with respect to exposure to shocks and the ability of their labor and product markets to cushion shocks. Consistent with the pattern of convergence, countries can be grouped in three categories: The "relative restrictive", the "relative liberal", and the "middle of the road" countries.

In some cases European countries, by implementing policy reforms, recorded a substantial improvement in the overall product and labor market regulation, between 1998 and 2003. Despite of this progress, the divergence between euro area and the U.S.A. has been broadened under this period of time.

Also, a high degree of correlation exists between the relative rigidity of product and labor market regimes, or a positive relationship between product and labor markets reforms, with the former preceding the latter, that means a positive relationship between employment protection legislation and product market regulation. As observed, since 1998 restrictive product market regulation tends to be matched by analogous employment protection legislation restrictions (Conway P. et all OECD 2005).

Protecting "insiders" by means of restrictive EPL and also because of the product market liberalization, reduces the rents accruing to firms, there is less incentive for labor to maintain or increase bargaining power aimed at capturing part of these rents, are some explanations to this correlation (Blanchard O. and Giavazzi F. 2003).

Similarities in countries performance of exposure and adjustment capability can be observed by deficit and debt position data, showing the room for maneuver of fiscal policy. Countries with rigid product and labor markets seem to have also limited fiscal room for maneuver, under Stability's and Growth Pact framework.

This fact reflects structural problems and rigidities in their public sector for this period of time. The delayed structural reforms, in the functioning of both private and public sector, make them vulnerable to shocks and the experience of asymmetric shocks but also asymmetric effects from symmetric shocks.

6. Identifying shocks

In EMU where widespread asymmetries exist, and where asymmetric shocks or symmetric shocks with asymmetric effects occur, we observe diverging implications and costs across European countries. Differences in exposure and adjustment capabilities to shocks seem to link to deteriorating performance, as reflected in a range of macroeconomic performance indicators, such as GDP growth, unemployment and inflation. Using Euroarea averages as a benchmark for performance comparisons, we estimate relative

performance deviations from this benchmark for each one of the countries, a usual way of identifying shocks (Wyplosz C. 2006).

Thus, asymmetrical inflation shocks are identified when deviations from Euroarea harmonized CPI-index differ significantly in two successive 5-year periods. Similarly, asymmetrical domestic demand and supply shocks can be approximated by the differentials in the growth of retail sales, volume indices, and industrial production indices. Identification of asymmetric shocks in fiscal policy, real wages, unemployment, trade balance and other variables can be derived in a similar way (Weber A. 1991) as the aggregate economic system is subject to all above mentioned kinds of shocks.

If such shocks are temporary, some of them usually bombard the economy a certain period, in contrast with permanent, which have persistent effects. There is of course a serious issue concerning a government's capability to make the right diagnosis about the origin, the nature and the duration of the shock, quickly enough to respond during the current period, with appropriate policy measures (Begg D. 1991). In the table 2, we use four indicators of macroeconomic performance: GDP growth, inflation, unemployment, and current account balance. For each country of the fifteen European countries, table 2 presents the differences for each indicator between the country in question and the Euro Area average, respectively.

This is done over two periods, the pre-euro years 1996-2000 (convergence period) and the post EMU period, 2001- 2005. Significant deviations from Euro area averages help us to identify the occurrence of shock for each country and variable.

Table 2: Relative performance in E.U. of 15 1995 - 2005								
Differences with Euro Area Average								
	Annual GDP growth, 5–year average		Inflation [a], 5-year average		Unemployment [b], 5-year average		Current account balance, 5-year average	
	1996-2000	2001-2005	1996 - 2000	2001-2005	1996-2000	2001-2005	1996-2000	2001-2005
BELGIUM	0	0,1	-0,1	-0,2	-1,1	-0,7	4,4	3,4
GERMANY	-0,7	-0,6	-0,6	-0,6	-1,5	0,2	-1,5	2,0
GREECE	0,7	2,9	2,9	1,3	0,9	1,7	-5,1	-9,8
SPAIN	1,4	1,8	0,9	1,0	4,8	1,9	-2,1	-5,4
FRANCE	0,2	0,3	-0,4	-0,2	1,0	0,3	1,3	-0,3
IRELAND	7,0	3,9	0,9	1,2	-2,0	-4,1	0,8	-1,2
ITALY	-0,8	-0,7	0,7	0,2	1,2	-0,2	1,2	-2,9
LUXEMBURG	3,4	2,0	0	0,6	-7,2	-4,8	9,9	8,6
NETHERLANDS	1,0	-0,5	0,2	0,6	-5,7	-4,9	4,1	5,7
AUSTRIA	0,2	0,2	-0,5	-0,3	-5,7	-4,1	-2,0	1,5
PORTUGAL	1,4	-0,7	0,7	1,0	-4,3	-2,6	-8,1	-8,9
FINLAND	2,0	1,0	-0,1	-0,8	1,9	0,4	5,1	4,5
DENMARK	0,2	0	0,3	-0,3	-4,6	-3,5	0,3	2,4
SWEDEN	0,5	1,0	-0,6	-0,7	-1,8	-3,6	3,4	5,4
U.K.	0,5	1,0	-0,1	-0,8	-3,4	-3,4	-2,0	-2,2
EURO – AREA AVERAGE	2,7	1,3	1,7	2,2	9,8	8,5	0,6	0,4

[a] Harmonized index of consumer price

[b] Number of unemployed as a percentage of civilian labor force.

Source: European Commission. European economy. Economic forecasts No2 spring 2006.

According to table 2, Greece seems to be the only country in the sample which has experienced asymmetric shocks in all four indicators, favorable ones concerning growth and inflation and unfavorable for unemployment and, especially, current account balance. Current account shocks of such dimensions certainly reflect severe loss of competitiveness. The same shock is also important in the case of Spain and Italy, while remains very high with little deterioration in the case of Portugal.

Spain, Italy and Ireland have also experienced positive unemployment shocks. We also observe differences and changes between the two periods for other countries, although not significant, a fact that confirms the absence of serious asymmetric shocks.

7. Conclusions

According to OCA theory, the occurrence of many shocks and of various types can be taken as a sign that EMU is not an optimal currency area and that nominal convergence is not sufficient to secure a real one and a smooth functioning of the EMU. It also indicates the existence of risks for future welfare in certain member countries. As explained in section 3, existing structural diversities in a number of economic aspects form a highly heterogeneous EMU. It is broadly accepted from the establishment of the EMU that these asymmetries can impose costs and have destabilizing consequences for some of the participating countries.

The enlarged Europe of twenty seven countries, most of them highly heterogeneous in economic terms, may enhance existing asymmetries and probably multiply potential sources of asymmetric shocks.

Because monetary policy could not deal with diverging implications of asymmetric shocks, alternative appropriate adjustment mechanisms and capabilities should be designed and used, in order to tackle the problems arising from a country's participation in the EMU.

Since the scope for discretionary and uncoordinated fiscal policies is limited under SGP and structural funds have only a marginal and a complementary role to play in supporting regional policies, the most important remaining tool is structural policies. The implementation of well designed structural reforms constitute the most efficient adjustment mechanism, able to increase the flexibility of national economy and safeguard long-term competitiveness and growth potential.

Aiming to speed up the implementation of structural reforms, European Union (EU) adopted the Lisbon strategy as a high priority. Despite a long process of economic integration, EU countries differ considerably in their economic structures, in their efforts, preferences and pace of implementing

structural reforms, as well as in establishing a homogeneous regulatory environment.

As we observed in table 1 and table 2, in some countries, structural rigidities exist both in product and labor markets, implying increased vulnerability to real shocks, coupled with long-term welfare losses. As economic theory suggests, reforms would be less effective if they take place only in one market, implying that they have to be implemented simultaneously in both markets. It has also been observed that, in certain countries, the above mentioned drawbacks coexist with limited room for maneuver for fiscal policies and this combination enhances their vulnerability to exogenous shocks.

As to the near future, an acceleration of structural reform, a more homogeneous economic behavior and the promotion of a macroeconomic stability culture, are likely to evolve due to multilateral policy surveillance. Such policies promote their adaptability by reducing the exposure to and the effects of, asymmetric shocks.

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